Air Quality in the Central Valley
A Catholic Social Teaching Perspective

The Catholic Diocese of Stockton
Social Justice Ministry – Environmental Justice Project
Then God said, “Let there be an expanse in the midst of the waters” ... and it was so. God called the expanse heaven. And there was evening and there was morning, a second day.

Genesis 1:6-8
Air’s Divine Significance

In the creation account of Genesis, we see that air is of such great importance that God dedicated an entire day to create the skies. It is second in the creation story only to light.
Unfortunately, mankind has not done a good job taking care of the air God gave to us. In many places, the air has become dangerously unhealthy for humans to breathe.
A Shared Responsibility

We all contribute to air pollution in some way, therefore we all share the responsibility to fix the problem. No single person or group is solely responsible and restoring this resource to its natural state will require cooperation from all members of the community.
Caring for the Air from a Catholic Perspective

- The Catholic View of Stewardship for the Environment
- Air Pollution in the Central Valley
- Environmental Justice and Catholic Social Teaching
- Modern Catholic Leaders and the Diocese of Stockton
The Creation Story:

- God blessed them, saying: “Be fertile and multiply; fill the earth and subdue it. Have dominion over the fish of the sea, the birds of the air, and all the living things that move on the earth.”

- The Lord God then took the man and settled him in the garden of Eden, to cultivate and care for it.

(Genesis 1:28, 2:15)
Question

How do you interpret “dominion”?
A Catholic Vision of Stewardship

- Calls to Stewardship
- Human responsibility
- Wellbeing of all God’s creations, including air

(above, St. Francis of Assisi, Patron Saint of the Environment)
The Lord said to Moses on Mount Sinai, "Speak to the Israelites and tell them: When you enter the land that I am giving you, let the land, too, keep a Sabbath for the Lord. For six years you may sow your field, and for six years prune your vineyard, gathering in their produce. But during the seventh year the land shall have a complete rest, a Sabbath for the Lord, when you may neither sow your field nor prune your vineyard. The aftergrowth of your harvest you shall not reap, nor shall you pick the grapes of your untrimmed vines in this year of Sabbath rest for the land.

(Leviticus 25:1-5)
Air Quality in the Central Valley

• California’s Central Valley: worst rated air quality in the United States.
• Quality of air you breathe affects your health and the health of future generations.
• Every Catholic’s responsibility to cultivate and care for the earth.
What is the “environment”?
Air Quality in Your Valley

• The “environment”: where we all “live, work and play.”

• Members of the environment of the Central Valley must understand the air has become dangerously unhealthy to breathe.
• Pollution is trapped by the valley’s bowl shape and climate.
Question

Where does the valley’s pollution come from?
Sources of Air Pollution

San Joaquin Valley Total Organic Gases 2005 Annual Average (Tons Emitted per Day) Total = 1752.90

- The Valley’s air pollution is due to a variety of factors including increasing population, geographical conditions and unwanted or unintended pollutants from agriculture, waste disposal and vehicles.

Organic Gases, Source: California Air Resources Board (C.A.R.B.)
The Valley’s air pollution is due to a variety of factors including increasing population, geographical conditions and unwanted or unintended pollutants from agriculture, waste disposal and vehicles.
Major Forms of Air Pollution

- Ground Level Ozone (O₃)
- Particulate Matter (PM₂.₅/₁₀)
- Carbon Monoxide (CO)
- Nitrogen Oxides (NOₓ)
- Sulfur Dioxide (SO₂)
- Methane (CH₄)
- Mercury (Hg)
- Volatile Organic Compounds (VOC’s)
# Major Forms of Air Pollution

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<td><strong>Indirectly Formed Through Mixing of Other Chemicals</strong></td>
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“Smog” is a common term for visible air pollution, which has two main components: ground-level ozone and particulate matter. However, very often people use “smog” to refer specifically to ozone pollution while "soot" refers to particulate matter.

(Central Valley Air Quality Coalition Definition)
Smog
Ozone (O$_3$)

- Ozone is a gas composed of 3 oxygen atoms.
- Upper atmosphere = Good
- Ground Level = Bad
Question

The American Lung Association gives counties grades (A through F) for air quality. What grade do you think your county received?
Ozone ($O_3$)

Every county your local air district (Fresno, Kern, Kings, Madera, Merced, Stanislaus, Tulare) an F grade for the number of ozone days, (except for San Joaquin, which received a D). 2005
Particulate Matter (PM)

- Particulate Matter is microscopic particles suspended in the air.
- In 2005, four of the nation’s ten worst metropolitan areas for year round particle pollution came from within the San Joaquin Valley Air Pollution Control District: Bakersfield (2nd worst), Visalia-Porterville (3rd worst), Fresno-Madera (5th worst), Hanford-Corcoran (7th worst).
Government Responsibility for Central Valley Air Quality

• **Federal:** The U.S. Environmental Protection Agency (EPA)
• **State:** The California Air Resources Board (CARB)
• **Regional:** The San Joaquin Valley Air Pollution Control District (SJVAPCD)
• **County/City:** Transportation Planning Agencies (TPAs) and Metropolitan Planning Organizations (MPOs)
Health Implications

• We breathe 50-60 lbs. of air per day. Air diffuses across the surface within your lung that is the size of a tennis court.
• Each day we take in 20,000 liters of air – compared to just a few liter of food or drink.
• The lung can not regenerate. Once an airway or alveolar wall is gone, it’s gone for good.
• The most vulnerable in society, especially children and the elderly are especially susceptible to pollution.

-adapted from: “Clearing the Air: How Epidemiology, engineering, and Experiment Finger Fine Particles as Airborne Killers” Jonathan Shaw, Harvard Magazine, May June 2005: Volume 107, Number 5
Human Health

• In the San Joaquin Valley, one out of every five children has asthma so severe that they miss school.
• There is a disproportionate impact on children, as for example, in Los Angeles, the coalition for clean air has stated that, “By the age of two months ...infants have already inhaled enough toxic pollutants to reach the EPA lifetime limit for cancer risk.”
Those Most Impacted

- Children
- The Elderly
- Adults who are active outdoors
- People who suffer from asthma and other respiratory diseases
- Low-income and people of color
Environmental Justice

• The Cerrell Report: commissioned in 1984 by the California Waste Management Board to recommend how to site waste incinerators.
• Suggested, “that companies target small, rural communities, whose residents are low income, older people or people with a high school education or less; communities with a high proportion of Catholic residents; and communities whose residents are engaged in resource extractive industries such as agriculture, mining and forestry.”
Environmental Injustice

Kettleman City, 1988
- Chem. Waste Management Inc., employed deceptive practices in an attempt to build a medical waste incinerator.
- Civic engagement through petitions and a lawsuit stopped its construction.
Environmental Injustice

Greyson, 1989

• Covanta Incinerator built.
• Burns an average of 800 lbs of trash per day.
• Releases toxins: PM, O₃, Hg, C₆H₆, heavy metals, unburned toxic chemicals, sulfur oxides, dioxins.
• Grassroots organization by the Grayson Community Council continue protests.
Environmental Injustice

Westly, 1999
- Lighting strike ignites 7 million illegally placed used tires
- Burns for 34 days, releasing dioxins, particulate matter, heavy metals and mercury.
- Originally planned to just let burn out (taking at least one year)
- Community action forced the authorities to extinguish the blaze.
Catholic Social Teaching

- Catholic Social Teaching is a vision for society in keeping with Biblical and Catholic values.
  - Draws upon the minds of Catholic leaders including the Pope and our Bishops, as well as the Catholic Community at large.
  - ex) the right to food, clean water, health care.
Core values in Catholic Social Teaching

- Dignity of the Human Person
- Common Good
- Option for the Poor
- Economic Justice
- Participation in social-political life
- Stewardship of God's Creation
Catholic Social Teaching’s Connections to Air Quality and Environmental Justice

- Human Dignity and Common Good
  - Universal human right to clean air.
  - Protecting all members of the human community

- Economic Justice and Option for the Poor
  - Air being degraded for the benefit of the some to the detriment of others.

- Participation in social-political life
  - Right to know and have a say in what is in their air.

- Stewardship
  - Responsibility to preserve clear air for future generations.
Have you heard Catholic leaders (Priests, Bishops, and the Pope) discussing environmental issues?
Pope John Paul II

• “Christians, in particular, realize that their responsibility within creation and their duty towards nature and the Creator are an essential part of their faith.”

(The Ecological Crisis, From the Vatican, 8 December 1989, Joannes Paulus II)
Pope John Paul II

• “...these discoveries in the fields of industry and agriculture have produced harmful long-term effects. This has led to the painful realization that we can not interfere in one area of the ecosystem without paying due attention both to the consequences of such interference in other areas and to the well-being of future generations.”

(The Ecological Crisis, From the Vatican, 8 December 1989, Joannes Paulus II)
• “...there is an order in the universe which must be respected, and that the human person, endowed with the capability of choosing freely, has a grave responsibility to preserve this order for the well-being of future generations. I wish to repeat that the ecological crisis is a moral issue.”

(The Ecological Crisis, From the Vatican, 8 December 1989, Joannes Paulus II)
“...humans, made in the image and likeness of God, are called in a special way to "cultivate and care for [the earth]" (Gen 2:15). Men and women, therefore, bear a unique responsibility under God: to safeguard the created world and by their creative labor even to enhance it. Safeguarding creation requires us to live responsibly within it, rather than manage creation as though we are outside it. The human family is charged with preserving the beauty, diversity, and integrity of nature, as well as with fostering its productivity. Yet, God alone is sovereign over the whole earth.” (Renewing the Earth, A Pastoral Statement of the United States Conference of Catholic Bishops (USCCB), November 14, 1991)
Stockton Diocese
Environmental Justice Project

The Diocese is working hard to bring groups together into dialogue, and provide parishes with the resources to understand and address environmental and health issues in the community.
Vision:

• The people of the Catholic Diocese of Stockton will contribute to the restoration and protection of a healthy society and environment.
Environmental Justice in Your Valley

Goals:

(1) To share with the Catholic community and the broader community the Church’s teaching that care for the environment is an important aspect of our faith.
Goals:

(2) To develop in each parish an environmental leadership team, working within the larger Social Ministry Committee, to carry out the tasks needed to develop a safe environment for all.
Goals:

(3) To engage faithful Catholic people in personal, familial and corporate actions that will contribute to the restoration and protection of the environment.
Environmental Justice in Your Valley

Goals:

(4) To identify specific issues around which to conduct research and to rally Catholics to advocate for policies that will contribute to a more healthy environment for all of life.
Successes in Cleaning the Air

Reasons for Optimism:
- National & International
  - Lead
  - CFCs
- Recent Developments in the Valley
  - Increasing research
  - ISR ruling
The Diocese Invites You To...

- Promote awareness of catholic social teaching in your parish about environmental justice
- Become aware of EJ issues in our diocese (air, water, land...)
- Work with the diocese to create solutions to our air quality problems in the valley.
And God said, "This is the sign of the covenant I am making between me and you and every living creature with you, a covenant for all generations to come: I have set my rainbow in the clouds, and it will be the sign of the covenant between me and the earth... Whenever the rainbow appears in the clouds, I will see it and remember the everlasting covenant between God and all living creatures of every kind on the earth."

(Genesis 9:12-13,16)
Discussion Questions:

1. How do you see these issues in your daily life and how do they affect you?
2. What other environmental issues are you aware of in your valley (water, chemicals, waste, etc.)?
3. Do you care?
4. Do you see how your Catholic faith connects to the environment? Should Catholics play a special part of the solution to these environmental problems?
5. What gifts, skills and interests can you apply to solve environmental issues in your community?
# Sources: (1 of 4)

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| 2. | **Background:** http://www.netjeff.com/gallery_storage/MyFavorites/clouds.jpg  
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**Image:** http://www.photosofcapecod.com/Bank%20Street%20Beach%20Storm%20Clouds.jpg |
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| 5. | **n/a** |
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| 9. | **Image:** http://www.ss.ca.gov/museum/spring.htm (adapted) |
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**Images:** [link to ambulance image], [link to patient image] |
| 28 | **Sources:** [link to CDC data on asthma]  
**Images:** [link to asthma kid image], [link to asthma news image] |
| 29 | **Images:** [link to air pollution & health information]  
**Images:** [link to Hispanic boy image], [link to elderly image] |
| 30 | **Source:** *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement* pg. 71.  
**Images:** [link to building image], [link to Agriculture image] |
| 31 | **Source:** *From the Ground Up: “Environmental Racism and the Rise of the Environmental Justice Movement”* Luke Cole and Sheila Foster. Pages 1-9  
**Image:** [link to city-data map] |
| 32 | **Sources:** [link to EPA report], [link to dioxin link], [link to Covanta factsheet], [link to Covanta image] |
| 33 | **Source:** [link to EPA report]  
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| 34 | n/a                                                                                           |
| 35 | **Adapted from:** [link to OSJSPM theme]                                                     |
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| 37 | **Image:** Clipart                                                                        |
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